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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PETER DROTT, HARALD KONIG, UDO JUNGSMANN,
ANDREAS BISCHOFF, and HANS-MICHAEL KOPPEL¹

Appeal 2008-4604
Application 10/522,044
Technology Center 3600

Decided: September 29, 2008

Before RICHARD E. SCHAFER, SALLY G. LANE, and
JAMES T. MOORE, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

The Appellants appeal under 35 U.S.C. § 134 (2002) from a final
rejection of claims 15-20 and 22-26.² We have jurisdiction under 35 U.S.C.
§ 6(b) (2002).

¹ The real party in interest is Continental Teves AG & Co. OHG. (See
Appeal Br. p. 1, citing Jan. 19, 2005, Reel/Frame 017329/0699).

² Claims 1-14 and 21 have been canceled.

1 The Appellants' claims are directed to a cylinder-and-piston unit
2 comprising a cylinder, a piston and a sealing collar. We understand that
3 such units may be useful in, e.g., hydraulic braking systems.

4 Claims 15, 16 and 24 are the only independent claims in the
5 application. The Appellants argue the rejection of claims 15-20 and 22-25
6 together. Therefore, we select independent claim 15 to decide the appeal
7 regarding the rejection of these claims. 37 C.F.R. § 41.37 (c)(1)(vii)(2006).
8 Accordingly, the remaining claims 16-20 and 22-25 stand or fall with claim
9 15.

10 The Appellants separately argue the rejection of dependent claim 26.
11 Therefore we separately consider claim 26 to further decide the appeal
12 regarding the rejection of this claim.

13 Claim 15 reads as follows:

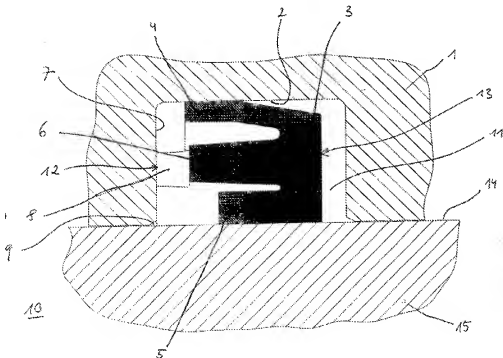
14 15. A cylinder-and-piston unit comprising a cylinder [1], a
15 piston [15] and a sealing collar [3],
16 the cylinder [1] comprising a bore, and one of the piston
17 and the cylinder having a wall surface [9, 14] along the bore,
18 the wall surface comprising a first sidewall extending
19 parallel to a longitudinal axis of the bore, a second sidewall
20 contiguous with the first sidewall and extending generally
21 perpendicularly to the first sidewall, a third sidewall contiguous
22 with the second sidewall and extending generally parallel to the
23 first sidewall, a fourth sidewall contiguous with the third
24 sidewall and extending generally parallel to the second
25 sidewall, and a fifth sidewall contiguous with the fourth
26 sidewall and extending generally parallel to the first sidewall
27 along the bore,
28 the second, third and fourth sidewalls being parts of one
29 unitary body, forming a groove [2] that is recessed the wall
30 surface,

the sealing collar [3] being positioned in the groove [2]
and comprising an outside sealing lip [4] and an inside sealing
lip [5],

the outside and inside sealing lips [4, 5] each having a
free end, the sealing collar further including a circumferential
extension [6] that extends in parallel to the sealing lips, is
arranged radially between the outside sealing lip and the inside
sealing lip and projects axially beyond the free ends of the
outside and inside sealing lips,

the circumferential extension [6] being configured to
contact the second sidewall [7] in the groove [2] and maintain
the free ends of the outside and inside sealing lips [4, 5] out of
contact with the second sidewall. (Additional indentation
added, see 37 CFR §1.75(i))(Reference numerals added).

Figure 1 from the Application is reproduced below.



The view is a cross-sectional view of a section of a cylinder and
piston unit, and a sealing collar.

1 Claim 26 reads as follows:

2 26. The cylinder-and-piston unit of claim 25, wherein the
3 sealing collar includes a rear surface opposite the free ends of
4 the outside and inside sealing lips, wherein the sealing collar
5 has a maximum outside diameter at the free end of the outside
6 sealing lip and a minimum outside diameter at the rear surface.
7

8 (App. Br. 10-12, Claims Appendix).

9 THE EVIDENCE

10 The Examiner relies upon the following as evidence in support of the
11 rejections:
12

13

14 Zöllner US 4,602,791 Jun. 29, 1986
15

16

17 THE REJECTIONS

18

19 The following rejections are before us for review:

20 1. Claims 15-20 and 22-26 stand rejected as being anticipated under 35

U.S.C. § 102(b) by Zöllner, US Patent 4,602,791 (Jun. 29, 1986).

We AFFIRM-IN-PART.

ISSUE

Have the Appellants established that the Examiner erred in determining that the prior art anticipated either:

- a cylinder-and-piston unit having a wall surface with sidewalls that form a recessed groove; or

- a sealing collar having a maximum outside diameter at the free end of the outside lip and a minimum outside diameter at the rear surface.?

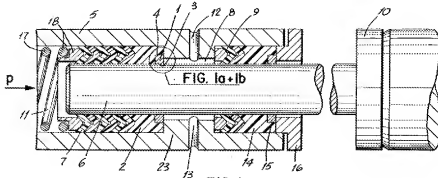
FINDINGS OF FACT

The record supports the following findings of fact by a preponderance of the evidence.

1. Zöllner describes a high pressure seal assembly for sealing two relatively movable parts against each other to prevent fluid leakage comprising at least one seal or guide ring formed of an elastically or plastically deformable material and a supporting ring positioned on the guide ring. (Zöllner Abstract; 1:1-14).

2. Zollner therefore describes a cylinder, piston, and sealing collar as instantly claimed. (FF1, Claim 15).

3. Zöllner's Figure 1, reproduced below,



illustrates a plunger piston surrounded by a high pressure seal which includes a seal ring **2**, cooperating with a supporting rings **1**, and has an annular groove open to an annular gap **3** to be sealed. (3:17-21).

4. Zollner therefore describes the wall surface forming a groove arrangement of claim 15. (FF3).

5. Zöllner describes that the high pressure seal is received in a plunger sleeve **5** and seals the sleeve against the displaceable piston **6**. (3:46-47).

6. Zollner therefore describes the sealing collar in the groove as claimed in claim 15. (FF5).

7. Zöllner also describes at the low pressure side of seat **23** is provided a second high pressure seal which includes a seal ring **14**, a supporting ring **15**, and a holding element **16** fixed in sleeve **5**. (3:59-63).

8. Zollner therefore describes the arrangement of the sealing collar within the groove as claimed in claim 15 (FF7).

9. Zöllner's Figure 2, reproduced below,

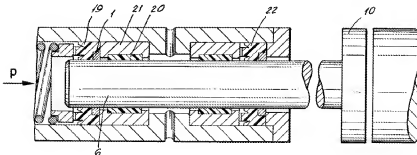


FIG. 2

1 illustrates a modified embodiment of the high pressure seal for a plunger
2 piston. (4:24-25).

3 10. Zöllner describes that the supporting ring **1** is positioned in a
4 groove formed in a seal ring **19**. (4:26-29).

5 11. Zöllner further describes a guide ring **20** is inserted in the holding
6 element **21** for guiding the plunger piston **6** in the inner surface of the
7 holding ring **21**. (4:44-47).

8 12. Zöllner describes a second seal ring **22** with radially extending
9 sealing lips and a second supporting ring supported in the respective groove
10 of seal ring **22**, similarly to the seal ring **19**. (4:53-55).

11 13. Zollner therefore describes the sealing collar being positioned in
12 the groove and comprising an outside sealing lip and an inside sealing lip as
13 claimed in claim 15.

14 14. Zollner reference numeral 22 specifically illustrates the outside
15 and inside sealing lips each having a free end, and a circumferential
16 extension that projects axially beyond the free ends of the outside and inside
17 sealing lips.

18 PRINCIPLES OF LAW

19 “A claim is anticipated only if each and every element as set forth in
20 the claim is found, either expressly or inherently described, in a single prior
21 art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d
22 628, 631 (Fed. Cir. 1987).

23 It is well settled that “claims in an application are to be given their
24 broadest reasonable interpretation consistent with the specification and that
25 claim language should be read in light of the specification as it would be

interpreted by one of ordinary skill in the art.” *In re Sneed*, 710 F.2d 1544,
1548 (Fed. Cir. 1983).

ANALYSIS

The Rejection of Claims 15-20 and 22-25

The Examiner found that Zöllner describes each element set forth in
claims 15-20 and 22-25. (Non-Final Rejection, Aug. 22, 2007, pp. 3-4).

Specifically, regarding representative claim 15, the Examiner found
that Zöllner describes:

- a cylinder comprised of a sleeve **5**,
- a holding element **16** (referred to as element “D” by the
Examiner), and
- an upper holding element **21**
- in contact with a seal ring **22**. (Id. 3).

The seal ring **22**, according to the Examiner, is the claimed sealing
collar. (Id.). We note that the holding element 16 and upper holding
element 21 act to form parts of the cylinder holding the piston into place.

The Examiner also found that Zöllner describes a piston **6** that is
accommodated in the cylinder’s bore. (Id.). Additionally the Examiner
found that Zöllner describes a sealing collar, by describing sealing ring **22**.
(Id.). According to the Examiner, Zöllner’s cylinder has a bore that
accommodates the piston, and has a wall surface along the bore. (Id.).

The Examiner also found that Zöllner’s cylinder has a wall surface
along the bore and that Zöllner’s Figure 2 illustrates that the wall surface
comprises five sidewalls. (Id.). In the rejection, the Examiner labeled a

perspective of Zöllner's Figure 2, reproduced below, to indicate these sidewalls.

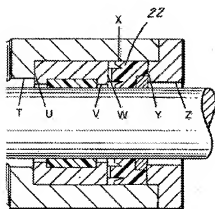


FIG. 2

Specifically, the Examiner found that Zöllner's Figure 2 illustrates that the wall surface of the cylinder has a first sidewall V that extends parallel to a longitudinal axis along of the bore, a second sidewall W contiguous with the first sidewall and extending generally perpendicularly to the first side wall, a third sidewall X contiguous with the second sidewall and extending generally parallel to the first sidewall, a fourth sidewall Y contiguous with the third sidewall and extending generally parallel to the second sidewall, and a fifth sidewall Z contiguous with the fourth sidewall and extending generally parallel to the first sidewall along the bore. (Id. 3-4). The Examiner also found that the Zöllner's second, third and fourth sidewalls W, X, Y are parts of one unitary body that form a groove that is recessed in the wall surface. (Id. 4).

According to the Examiner, Zöllner's sealing collar 22 is positioned in the groove and comprises an outside sealing lip and an inside sealing lip.

(Id.). The Examiner found that the outside and inside sealing lips of Zöllner's sealing collar have a free end (facing down in Fig. 2). (Id.). Additionally, the Examiner found that Zöllner's Figure 2 illustrates that the sealing collar **22** further includes a circumferential extension that extends in parallel to the sealing lips, and is arranged radially between the outside sealing lip and the inside sealing lip and projects axially beyond the free ends of the outside and inside sealing lips, the circumferential extension being configured to contact the second sidewall in the groove and maintain the free ends of the outside and inside sealing lips out of contact with the second sidewall. (Id.).

The Appellants assert that Zöllner does not anticipate claims 15-20 and 22-25 because "Zöllner does not teach a cylinder-and-piston unit having a wall surface with sidewalls that form a recessed groove." (App. Br. 5-8). Specifically, the Appellants challenge the Examiner's finding that the wall surface of Zöllner's cylinder is comprised of sidewalls **V**, **W**, **X**, **Y** and **Z**. (Id.). The Appellants assert that only sidewall **X** is on the cylinder's wall surface, while sidewalls **V** and **W** are instead located on the wall surface of holding ring **21** and sidewalls **Y** and **Z** are located on the wall surface of holding element **16**. (Id.). The Appellants further assert that because sidewalls **V**, **W**, **Y** and **Z** are not located on the wall surface of Zöllner's cylinder, the annular space between the holding ring **21** and the holding element **16** cannot be considered as a "groove" or to be "recessed" in the wall surface of the cylinder. (Id. 6).

These arguments are not persuasive.

Initially, we note that the Appellants and the Examiner describe what constitutes Zöllner's cylinder differently. The Examiner found that Zöllner's cylinder includes the plunger sleeve **5**, the holding element **21** (in contact with **22**), and the holding element **16** (also referred to by the Examiner as "**D**"). The Appellants, on the other hand, assert that Zöllner's cylinder is limited to the plunger sleeve **5** (also labeled as **105** in Figure 3).

We agree with the Examiner's reading of the Zollner reference. We see Zollner's cylinder as including the entire portion of the assembly or unit that encases or holds the piston or plunger.

Zöllner's assembly, as illustrated in Figures 1 and 2, depicts a plunger encased by a sleeve **5**, and two holding elements, **16** and **21**. The cylinder includes assembled holding elements **16** and **21** along with the sleeve **5**. Consequently, sidewalls **V** and **W** are located on the wall surface of upper holding ring **21** and sidewalls **Y** and **Z** are located on the wall surface of holding element **16**. These sidewalls are located on the wall surface of the cylinder, as claimed and form a groove therein.

Similarly, because sidewalls **V**, and **W**, located on element **21** and sidewalls **Y** and **Z**, located on element **16**, are each considered to be located on the wall surface of Zöllner's cylinder, the Appellants have not established that the Examiner erred in determining that the annular space between element **21** and element **16** is a "groove" that is "recessed" in the wall surface of the cylinder. (Answer 10).

Additionally, the Appellants assert that Zöllner's sidewalls **W**, **X**, and **Y** are also not "contiguous," as claimed. (Id.). In support of this assertion the Appellants argue that **W** and **X** are divided by a clearance space that

1 “separates holding ring (21) from cylinder (5), and Y and Z are divided by a
2 clearance space that separates cylinder (5) from holding element (16).”
3 (Id.).

4 This argument is also unpersuasive as it is unsupported by the
5 evidence. Zöllner’s Figure 2 does not depict any “clearance spaces”
6 separating sidewalls **W** and **X**, or separating sidewalls **X** and **Y**. Moreover,
7 as the Examiner responded, Zöllner only describes spaces between element
8 **16** and piston **6**; between element **5** and piston **6**; and between element **21**
9 and piston **6**. (Answer 10-11; Zöllner Fig. 2).

10 Zöllner, however, does not describe and the drawings do not show any
11 spaces between element **21** and sleeve **5**, nor between sleeve **5** and element
12 **16**. Consequently, we do not find that the Appellants have established that
13 the Examiner erred in determining that Zöllner’s sidewalls **W**, **X**, and **Y** are
14 contiguous, as claimed.

15 The Appellants further assert that Zöllner’s sidewalls **W**, **X**, and **Y** are
16 not “parts of one unitary body,” as claimed, but instead represent “parts of
17 three independently moving components (i.e. W is on holding ring (21), X is
18 on cylinder (5) and Y is on holding element (16)).” (App. Br. 5; see also
19 Reply Br. 2). In the Reply, the Appellants additionally assert that W, X and
20 Y are not “parts of one unitary body” because “the independent parts have
21 different physical properties, such as elasticity and plasticity.” (Reply Br.
22 2).

23 Determination of whether Zöllner’s **W**, **X**, and **Y** sidewalls are “parts
24 of one unitary body,” as claimed, depends upon our construction of the
25 claim language. As we stated, *supra*, “claims in an application are to be

1 given their broadest reasonable interpretation consistent with the
2 specification and [the] claim language should be read in light of the
3 specification as it would be interpreted by one of ordinary skill in the art.”
4 *In re Sneed*, 710 F.2d 1544, 1548 (Fed. Cir. 1983). As before, the
5 specification does not define the disputed claim language.

6 Nor have the Appellants directed us to any persuasive evidence that a
7 more narrow definition of the claim limitation applies, i.e., that “parts of one
8 unitary body” turns on whether the parts “are independently moveable” or
9 “have different physical properties, such as elasticity and plasticity.” (Reply
10 Br. 2). Therefore, we construe the phrase “parts of one unitary body”
11 broadly to describe two or more similar and/or distinct members that come
12 together to form a single structure. It is the applicants’ burden to precisely
13 define the invention, not the PTO’s. *In re Morris*, 127 F.3d 1048, 1056
14 (Fed. Cir. 1997).

15 Therefore, giving the phrase “parts of one unitary body” its broadest
16 reasonable interpretation, it is reasonable to interpret the phrase broadly to
17 describe the structure resulting from Zöllner’s **W**, **X**, and **Y** sidewalls. The
18 fact that these sidewalls are parts or members of three separate elements, i.e.,
19 the holding ring/element **21**, sleeve **5**, and holding element **16**, does not
20 exclude them from being recognized together as a unitary body, as claimed.
21 Indeed, as we discussed, *supra*, the separate elements **21**, **5** and **16**, that
22 provide the sidewalls **W**, **X**, and **Y** are also a part of a unitary body, i.e.,
23 Zöllner’s cylinder. Moreover, these **W**, **X**, and **Y** sidewalls come together in
24 a unitary fashion to form the recessed groove in which the sealing collar is
25 maintained.

For these reasons, we do not find that the Appellants have established that the Examiner erred in determining that Zöllner describes “second, third and fourth sidewalls being parts of one unitary body,” as claimed.

The Rejection of Claim 26

In addition to the findings discussed regarding the rejections of claims 15-20 and 22-25, the Examiner also found that Zöllner describes each element set forth in dependent claim 26. (Non-Final Rejection, Aug. 22, 2007, p. 8). Claim 26 reads as follows:

26. The cylinder-and-piston unit of claim 25, wherein the sealing collar includes a rear surface opposite the free ends of the outside and inside sealing lips, wherein the sealing collar has a maximum outside diameter at the free end of the outside sealing lip and a minimum outside diameter at the rear surface.

(App. Br. 12, Claims Appendix).

Specifically, the Examiner found that Zöllner describes that the sealing collar has a rear surface, e.g., the surface of element **22** in contact with element **21**, opposite the free ends of the outside and inside sealing lips. (Id. 8). The Examiner also found that the Zöllner’s sealing collar has a maximum outside diameter at the free end of the outside sealing lip and a minimum outside diameter at the rear surface. (Id.). The Examiner stated that “the minimum outside diameter is the same width as the supporting ring **1** and will always be smaller than the maximum diameter at the outside seal.” (Id.).

The Appellants challenge the Examiner’s rejection by repeating the arguments set forth regarding the rejections of claims 15-20 and 22-25.

1 Consequently, we do not find these arguments persuasive for the same
2 reasons discussed, *supra*.

3 The Appellants further challenge the Examiner's anticipation rejection
4 by asserting that "Zöllner does not disclose a sealing collar having a
5 maximum outside diameter at the free end of the outside lip and a minimum
6 outside diameter at the rear surface." (App. Br. 9).

7 We agree with the Appellants.

8 Specifically, we find that Zöllner describes a sealing collar, i.e.,
9 sealing ring **22**, and that the sealing collar has a rear surface (in contact with
10 holding element 16), that is opposite the free ends of the outside and inside
11 sealing lips. (See Examiner's Att. 1 of Final Rejection, Jul. 13, 2007,
12 incorporated by reference in Non-Final Rejection, Aug. 22, 2007, p. 2).

13 However, we do not find that Zöllner describes the relative outside
14 diameters of the sealing collar's free end of the outside sealing lip and rear
15 surface, as claimed in dependent claim 26. Consequently, we do not find
16 that Zöllner anticipates claim 26.

17 Accordingly, we affirm the Examiner's rejections of claims 15-20 and
18 22-25, but reverse the rejection of claim 26.

CONCLUSION OF LAW

On the record before us, the Appellants have not shown error on the part of the Examiner's finding that the cited prior art anticipated each limitation of claims 15-20 and 22-25.

However, the Examiner has not established a prima facie case of anticipation regarding claim 26.

DECISION

The Rejection of claims 15-20 and 22-25 as being anticipated under 35 U.S.C. § 102(b) by Zöllner is AFFIRMED.

The Rejection of claim 26 as being anticipated under 35 U.S.C. § 102(b) by Zöllner is REVERSED.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED-IN PART

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